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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

In re the Application

Inventor : TAN
Application No. : 10/516,546
Filed : 12/02/2004
For : METHOD AND APPARATUS FOR AUTO-TUNING OF
A RADIO FM-RECEIVER

APPEAL BRIEF

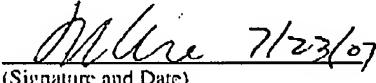
On Appeal from Group Art Unit 2618

Date: 07/16/2007

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Michael Ure
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(Signature and Date)

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RELATED PROCEEDINGS

EVIDENCE

TABLE OF CASES

NONE

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I. REAL PARTY IN INTEREST

The real party in interest is NXP B.V., the successor in interest to the present assignee of record of the present application, Koninklijke Philips Electronics N.V., and not the party named in the above caption.

II. RELATED APPEALS AND INTERFERENCES

With regard to identifying by number and filing date all other appeals or interferences known to Appellant which will directly effect or be directly affected by or have a bearing on the Board's decision in this appeal, Appellant is not aware of any such appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-3 are pending, all of which stand finally rejected and form the subject matter of the present appeal. Claims 4-7 have been canceled.

IV. STATUS OF AMENDMENTS

All amendments have been entered. No amendment after final rejection has been submitted.

V. SUMMARY of the CLAIMED SUBJECT MATTER

The present invention relates to a radio scanning technique for setting presets of an FM radio. It is often experienced that such presets produce only noise and not an intelligible radio signal. The invention aims to avoid this situation. While the means for

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achieving the desired end are indeed simple, the result is a marked improvement over conventional methods.

In conventional methods, exemplified by the primary reference Kennedy, a two-part test is applied to a received signal, including an "intensity" test and an "AFC window" test. If the received signal passes both tests, a preset for that signal is stored.

In the present invention, the two-part test is applied repeatedly (for example 10 times) at intervals. The received signal must pass both tests some minimum number of times (for example, 8 times) in order for a preset to be stored.

The following analysis of independent claim 1 is presented for convenience:

Element	Figure(s)	Paragraph(s) and/or page(s)
1. Method of auto-tuning a radio FM-receiver by scanning the receiver frequency band until a FM signal is received meeting criteria for identifying the signal as being of a predetermined quality, particularly coming from a valid FM station,	Sole figure	
wherein at least during tuning it is established whether or not the FM signal meets the criteria,	Sole figure, 5 and 6	Page 3, line 6 to page 4, line 8.
whereafter the FM signal is tested a predetermined number of times,	Sole figure, 4	Page 3, line 6 to page 4, line 8.
and information denoting a frequency of the FM signal is stored only if the criteria are met a majority of the times.	Sole figure, 8	Page 3, line 6 to page 4, line 8.

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The following analysis of independent claim 3 is presented for convenience:

Element	Figure(s)	Paragraph(s) and/or page(s)
3. Auto tuning device comprising:		
means for registering whether or not a FM signal, received in a radio FM receiver, meets criteria for identifying the signal as being of a predetermined quality, particularly coming from a valid FM station,	Sole figure	Page 3, line 6 to page 4, line 8.
counting means for registering in an interval of a predetermined number of times that is registered whether or not the FM signal meets the criteria, the number of times the FM signal meets the criteria, and	Sole figure, 5 and 6	Page 3, line 6 to page 4, line 8.
means for storing information denoting a frequency of the FM signal only if the criteria are met a majority of the times.	Sole figure, 8	Page 3, line 6 to page 4, line 8.

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VI. GROUNDS of REJECTION to be REVIEWED ON APPEAL ~~RECEIVED
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The issues in the present matter are whether:

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1. under 35 USC 103(a), claims 1-3 are unpatentable over Kennedy in view of Daughtry further in view of Tomita.

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Kennedy exemplifies the prior art and is described at page 2, lines 1-12 of the present specification. A preset is stored when the received signal meets a two-part intensity/window test.

Daughtry is described as "clearly disclosing...determining the integrity of a received RF signal (to avoid accepting an interfering signal or noise) by measur[ing] signal strength and measur[ing] signal frequency a predetermined number of times, and such signal is accepted for further process[ing] if at least one-half of the times the condition is met."

Daughtry is in fact quite different from Kennedy. Daughtry relates to Automatic Frequency Control in a cell phone handset, i.e., tracking the frequency of the received cellular signal from the base station to provide a stable local oscillator signal with the specified frequency tolerance. Effective AFC allows a cheap oscillator to be used in the handset.

Daughtry relates in particular to the gathering of a signal measurement statistic indicative of signal quality and depending on that statistic either performing AFC based on the frequency measurements performed or not performing AFC (AFC HOLD).

Daughtry takes 10 frequency counts and, as a preliminary test, tests whether during at least half of those frequency counts a Word Sync signal was properly received, indicative of a valid signal. If not, then an AFC HOLD routine is entered. If so, and if subsequent

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tests are also passed, then AFC is performed to adjust the frequency of the local oscillator to track the base station frequency.

The generalized teaching of Daughtry of making repeated measurement of a radio signal and taking or not taking an action based on a "majority vote" of such measurements is not sufficient to render obvious the present invention, particularly in view of the distinct differences between Daughtry and Kennedy. The nature and aims of the two systems are very different—FM frequency preset in the case of Kennedy and cellular Automatic Frequency Control in the case of Daughtry. The nature of the signals in the two systems is very different. There is no Word Sync in Kennedy and hence no way of applying the preliminary test of Daughtry. Furthermore, Daughtry contains no teaching of introducing a delay between repeated measurements (present application Figure, "Add delay"). Although not specifically claimed, it is this delay that in the context of FM lends efficacy to the repeated measurement and testing. In the context of FM, without the added delay, the repeated measurements could be expected to yield substantially the same results, vitiating any advantage to be gained.

It therefore would not have been obvious to combine the teachings of Kennedy, Daughtry and Tomita to arrive at the invention of claim 1.

Independent claim 3 claims an apparatus for performing the method of claim 1 and is believed to be patentable for the same reasons as claim 1. It would not have been obvious to combine the teachings of Kennedy, Daughtry and Tomita to arrive at the invention of claim 3.

With regard to dependent claim 2, it depends from independent claim 1, which has been shown to be patentably distinguishable over the cited reference. Accordingly, it is also

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patently distinguishable and allowable over the cited references by virtue of their dependency upon an allowable basic claim.

In view of the above, applicant submits that all of the above referred-to claims are patentable over the teachings of the cited references.

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VIII. CONCLUSION

In view of the above analysis, it is respectfully submitted that the referenced teachings, whether taken individually or in combination, fail to anticipate or render obvious the subject matter of any of the present claims. Therefore, reversal of all outstanding grounds of rejection is respectfully solicited.

Date: 7/23/07

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IX. APPENDIX: THE CLAIMS ON APPEAL

1. Method of auto-tuning a radio FM-receiver by scanning the receiver frequency band until a FM signal is received meeting criteria for identifying the signal as being of a predetermined quality, particularly coming from a valid FM station, wherein at least during tuning it is established whether or not the FM signal meets the criteria, whereafter the FM signal is tested a predetermined number of times, and information denoting a frequency of the FM signal is stored only if the criteria are met a majority of the times.

2. An electronic device (10) as claimed in claim 1, characterized in that the first signal transition dependent delay circuit (16a) comprises a logic element (30; 40) having: a first input (32; 42) being coupled to an input (31) of the first signal transition dependent delay circuit (16a) via a first input delay element (36); a second input (34; 44) being coupled to the input (31) of the first signal transition dependent delay circuit (16a); and an output (37; 47) being coupled to the first conductor (12a).

3. Auto tuning device comprising:

means for registering whether or not a FM signal, received in a radio FM receiver, meets criteria for identifying the signal as being of a predetermined quality, particularly coming from a valid FM station,

counting means for registering in an interval of a predetermined number of times that is registered whether or not the FM signal meets the criteria, the number of times the FM signal meets the criteria, and

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means for storing information denoting a frequency of the FM signal only if the criteria are met a majority of the times.

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X. APPENDIX: RELATED PROCEEDINGS

NONE

XI. APPENDIX: EVIDENCE

NONE